

CLAIMS

I/We claim:

1. A method for structuring a procedure, comprising:
providing reply-handling logic within the procedure to control execution of the procedure according to a phase parameter, the phase parameter identifying one of a plurality of sub-procedures of the procedure,
identifying within the procedure a call to an external function, and
inserting a break point within the procedure associated with the external function call, thereby defining a sub-procedure of the procedure.
2. The method of claim 1 wherein the reply-handling logic comprises logic to update the phase parameter.
3. The method of claim 1 further comprising inserting logic to update the phase parameter in at least one of the plurality of sub-procedures.
4. The method of claim 1 wherein the reply-handling logic employs conditional logic statements.
5. The method of claim 1 wherein the reply-handling logic employs switch/case instructions.
6. The method of claim 1 wherein the reply-handling logic employs test/branch instructions.
7. The method of claim 1 wherein the reply-handling logic further comprises instance state logic to identify an instance of the procedure.
8. A method for executing a procedure having a plurality of sub-procedures, comprising:
executing a first sub-procedure of the procedure,
calling an external function,

passing a phase parameter identifying one selected from the first sub-procedure and a second sub-procedure to the external function,
passing program control to the external function, and
passing program control to the second sub-procedure based on the phase parameter upon execution of the external function.

9. The method of claim 8 wherein passing the phase parameter identifying one selected from the first sub-procedure and the second sub-procedure comprises pushing the phase parameter onto a stack.

10. The method of claim 8 wherein the external function passes the phase parameter back with the program control.

11. The method of claim 8 wherein the first sub-procedure updates the phase parameter.

12. The method of claim 8 further comprising reply-handling logic to direct program control to the second sub-procedure based on the phase parameter.

13. The method of claim 12 wherein the reply-handling logic updates the phase parameter.

14. The method of claim 8 wherein the phase parameter is a local variable stored in the environment surrounding a module instance.

15. The method of claim 8, further comprising:
analyzing an instance state parameter identifying a procedure instance, and
directing program control to the identified procedure instance based on the instance state.

16. A system for structuring a procedure, comprising:
a processor,

a memory connected to the processor storing processor executable instructions to control operation of the processor,

the processor executable instructions including;

instructions to provide reply handling logic within the procedure to control execution of the procedure according to a phase parameter, the phase parameter identifying one of a plurality of sub-procedures of the procedure,

instructions to identify within the procedure a call to an external function,

instructions to insert a break point within the procedure associated with the external function call, thereby defining a sub-procedure of the procedure, and

instructions to insert logic to update the phase parameter.

17. The system of claim 16 wherein the reply handling logic employs conditional logic statements.

18. The system of claim 16 wherein the reply handling logic employs switch/case instructions.

19. The system of claim 16 wherein the reply handling logic employs test/branch instructions.

20. The system of claim 16 wherein the reply handling logic further comprises:
instructions to identify an instance state of the procedure, and
instructions to direct program control to a procedure instance as function of the instance state of the procedure.

21. A system for executing a procedure having a plurality of sub-procedures comprising:

a processor,

a memory connected to said processor storing processor executable instructions to control operation of said processor,

the processor executable instructions comprising;
instructions to execute a first sub-procedure,
instructions to call and external function,
instructions to pass a phase parameter and program control to the
external function,
instructions to direct program control to a second sub-procedure based
on the phase parameter upon execution of the external function.

22. The system of claim 21 wherein the passing the phase parameter to the
external function comprises instructions to push the phase parameter onto a stack.

23. The system of claim 21 wherein the instructions to execute the first procedure
comprises instructions update the phase parameter.

24. The system of claim 21 wherein the processor executable instructions further
comprise reply-handling logic to direct program control to the second sub-procedure
based on the phase parameter.

25. The system of claim 24 wherein the reply-handling logic further comprises
instructions to update the phase parameter.

26. The system of claim 24 wherein the processor executable instructions further
comprise:

instructions to assign an instance state parameter to the procedure
identifying a procedure instance;

instructions to analyze the instance state parameter identifying the
procedure instance; and

instructions to direct program flow to the procedure instance identified by
the instance state parameter upon execution of the external function.

27. The system of claim 21, wherein the external function passes the phase
parameter back upon execution of the external function.

28. The system of claim 21, wherein the phase parameter is a local variable stored in the environment surrounding the module.

29. A computer-readable storage medium comprising:

instructions for providing reply-handling logic within a procedure to control execution of the procedure according to a phase parameter, the phase parameter identifying one of a plurality of sub-procedures of the procedure,

instructions for identifying within the procedure a call to an external function,

instructions for inserting a break point within the procedure associated with the external function call, thereby defining a sub-procedure of the procedure, and

instructions for inserting logic to update a phase parameter.

30. The computer-readable storage medium of claim 29 wherein the instructions for providing reply handling logic within the procedure further comprise instructions to control execution of the procedure according to an instance state parameter, the instance state parameter identifying a procedure instance.

31. A computer-readable storage medium comprising:

instructions for executing a sub-procedure,

instructions for communicating a phase parameter identifying one selected from a first sub-procedure and a second sub-procedure,

instructions for directing program flow to the external function,

instructions for directing program flow to a second sub-procedure as a function the phase parameter upon execution of the external function.

32. The computer-readable storage medium of claim 31 further comprising:

instructions for communicating an instance state parameter identifying a procedure instance; and

instructions for directing program flow to the procedure instance identified by the instance state.

33. A system for executing a procedure having a plurality of sub-procedures comprising:

- means for identifying a plurality of sub-procedures,
- logic to call an external function,
- means for communicating the identity of one selected from a first sub-procedure and a second sub-procedure to the external function,
- means for receiving a reply from the external function,
- means for receiving the identity of the one selected from the first sub-procedure and the second sub-procedure from the external function,
- logic to analyze the identity of the one selected from the first sub-procedure and the second sub-procedure received from the one external function, and
- logic to pass control to the second sub-procedure as a function of the identity of the one selected from the first sub-procedure and the second sub-procedure.

34. The procedure of claim 33 wherein the plurality of sub-procedures are defined as a function of a call to an external function.

35. The procedure of claim 33 wherein the means for identifying the plurality of sub-procedures comprises a phase parameter.

36. The procedure of claim 33 wherein the means for identifying the plurality of sub-procedures further comprises an instance state parameter for identifying a procedure instance.

37. The procedure of claim 33 wherein the means for communicating the identity of the one selected from the first sub-procedure and the second sub-procedure comprises storing the at least one parameter in a local environment.

38. The procedure of claim 33 wherein the means for communicating the identity of the one selected from the first sub-procedure and the second sub-procedure comprises pushing the a parameter onto a stack and pulling the parameter off the stack upon execution of the external function.

39. The procedure of claim 33, wherein the means for receiving the identity of the one selected from the first sub-procedure and the second sub-procedure from the external function comprises passing the identity of the one selected from the first sub-procedure and the second sub-procedure back in the external function's response.